



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,624	09/29/2006	Jean-Michel Morelle	128118	9193
25944 7590 05/26/2009 OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850				
EXAMINER				
SMITH, COURTNEY L				
ART UNIT		PAPER NUMBER		
2835				
MAIL DATE		DELIVERY MODE		
05/26/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/579,624

Applicant(s)

MORELLE ET AL.

Examiner

COURTNEY SMITH

Art Unit

2835

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2009.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-16 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 05/17/2006, 07/21/2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/5508)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1-13, & 16**, are rejected under 35 U.S.C. 102(e) as being anticipated by **(Elpedes 7,170,151)**.

Regarding Claims 1, Elpedes discloses a device (**Fig. 1A**) for cooling an exothermic electrical component (**118**) of the type comprising a metal member (**102**) forming a radiator thermally coupled to a metal mass (**108**) of the component forming a heat dissipating mass of the component, wherein the radiator is thermally coupled to the dissipating mass by at least one heat sink formed by an autogenous weld (**wherein Col. 2, lines 28-30; whereas 104 is a solder wettable surface of the radiator forming a heat sink**) between one face (**surface of 109 which abuts 104**) of the dissipating mass called the dissipating face and one face (**surface of 104 which abuts 109**) of the radiator opposite each other and the heat sink is constituted by the materials of the dissipating mass and of the radiator (**Col. 2, lines 12-16 discloses dissipating mass 108 may be made of silver, copper etc. and Col. 2, lines 24-28 discloses the**

radiator 102 may be made of silver, copper etc., and Col. 2, lines 28-33.discloses the heat sink 104 may be formed of silver, copper etc.).

Regarding Claim 2, Elpedes discloses a device (**Fig. 1A**) as claimed in claim 1, in which at least one element among the dissipating mass and the radiator is made from copper (**Col.2, lines 23-28**).

Regarding Claim 3, Elpedes discloses a device (**Fig. 1A**) as claimed in claim 1, in which the component comprises at least one heat source (**110**) and in which the heat sink is aligned (**Col. 2, lines 60-64**) with this source substantially parallel to a direction perpendicular to the dissipating face.

Regarding Claim 4, Elpedes discloses a device (**Fig. 1A**) as claimed in claim 3, in which the heat source comprises a semiconductor (**zener diodes--Col. 2, lines 18-21**).

Regarding Claim 5, Elpedes discloses a device (**Fig. 2**) as claimed claim 1, in which the area of the dissipating face included in the heat sink corresponds to at least 5% of the area of the dissipating face (**as depicted in Fig. 2—solder 124 covers an entire dissipating face , and thus at least 5% of the area is covered**).

Regarding Claim 6, Elpedes discloses a device (**Fig. 1A**) as claimed in claim 1, in which the sink also forms a means (**Col. 2, lines 9-10--wherein 101 is mounted via**

108, and 108 is soldered to 104) fixing the component to the radiator (further disclosed by Col. 2, lines 23-30).

Regarding Claim 7, Elpedes discloses a device (**Fig. 1A**) as claimed in 1, in which the sink also forms a means (**via 116--Col. 3, lines 1-9**) of electrical conduction between the component and the radiator.

Regarding Claim 8, Elpedes discloses a device (**Fig. 1A**) as claimed in any Claim 1, in which the radiator has a plate shape (**as depicted in Fig. 1A**) and is provided with one large face opposite the dissipating mass and one large face opposite to the preceding face, bearing on a support (**120**).

Regarding Claim 9, Elpedes discloses a device (**Fig. 1A**) as claimed in claim 8, in which the support is made from a material transparent to a wavelength of a laser welding head (**Col. 3, lines 10-12**).

Regarding Claim 10, Elpedes discloses a device (**Fig. 1A**) as claimed in 8, in which the radiator is provided with two small opposed faces connected by over molding of material preferably of plastic, to two substantially parallel electrically conducting bars (**whereby 102 is connected by plastic molding 112 to conducting bars 116 as depicted in Fig. 2, and further disclosed by Col. 3, lines 2-6**).

Regarding Claim 10, Elpedes discloses a device (**Fig. 1A**) as claimed in claim1, comprising a plurality of heat sinks (**as disclosed by Col. 1, lines 32-48; wherein a plurality of solder wettable surfaces are set forth**).

Regarding Claims 12-13, and 16, the method steps are necessitated by the structure as disclosed by Elpedes.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 14-15**, are rejected under 35 U.S.C. 103(a) as being unpatentable over (**Elpedes 7,170,151**) as applied to claims 12 above, in view of (**Barnett 6,903,380**).

Regarding Claims 14-15, the method steps are necessitated by the structure as disclosed by Elpedes, **except** explicitly disclosing the support is made from a material transparent to a wavelength of a laser welding head, in which the autogenous beam welding is carried out through the support. However, **Barnet** discloses a support (**27**) is made from a material transparent to a wavelength of a laser welding head, in which the autogenous beam welding is carried out through the support (**as disclosed in Col. 7, lines 57-65**). It would have been obvious to one having ordinary skill in the art at the

time that the invention was made to provide the device of Elpedes with the wavelength transparent material of Barnett in order to allow for a more improved heat sink assembly without overheating the electrical component.

Response to Arguments

6. Applicant's arguments filed 07/21/2008 have been fully considered but they are not persuasive. Regarding Claims 1-16; the applicant argues that 'Elpedes fails to disclose that metal mass 108 is coupled to the radiator 102 by a heat sink constituted by the materials of the metal mass and the radiator; the applicant also argues that 'Elpedes fails to disclose the formation of heat sinks by the autogeneous welding'; additionally, the applicant is unclear as to whether the heat sink is formed by 102 or 104. The Examiner respectfully disagrees. It is to be noted that a heat sink structure is disclosed, as shown in the above rejection of Claim 1. Although, autogenous welding is a process by which a structure is manufactured, and is thus not patentable as it relates to this structure claim, as set forth by MPEP 2113—Product by Process Claims; the applicant has failed to set forth any arguments to address how the 'soldering' of Elpedes does not read on the autogenous welding of the instant application. Furthermore, the heat sink-104, metal mass-108 and radiator may all be formed at least by silver and/or copper as above rejected and disclosed by **(Col. 2, lines 12-16 discloses the dissipating mass 108 may be made of silver, copper etc. and Col. 2, lines 24-28 discloses the radiator 102 may be made of silver, copper etc., and Col. 2, lines 28-33. discloses**

the heat sink 104 may be formed of silver, copper etc.). It is also to be noted that the applicant has asserted that the radiator is thermally coupled to the dissipating mass by atleast one heat sink formed by an autogenous weld, and thus Elpedes discloses the radiator 102 thermally coupled to 108 by a wettable surface 104 of the radiator which forms a heat sink; whereas the solderable surface is depicted in Fig. 2 as solder 124.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to COURTNEY L. SMITH whose telephone number is (571)272-9094. The examiner can normally be reached on Monday-Friday 7:30a-5p (1st Fri. off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jayprakash Gandhi can be reached on 571-272-3740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

Art Unit: 2835

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. L. S./

/Jayprakash N Gandhi/

Supervisory Patent Examiner, Art Unit 2835